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June 11, 1999

US EPA RECORDS CENTER REGION 5



Mr. Daniel Schultz
Chief, Field Operations Section
Environmental Quality Analyst
Michigan Department of Environmental Quality
Knapps Center P.O. Box 30426
Lansing, Michigan 48909-7926

Subject: BASF Corporation's Riverview Property
Request for Clarification
DEQ's Letter Dated June 4, 1999

Dear Mr. Schultz:

BASF Corporation received the Department of Environmental Quality's (DEQ) letter commenting on our work plan for the former FMT site in Riverview, Michigan. Overall, BASF is disturbed by the tone and content of the DEQ's June 4, 1999, letter. We have worked proactively with the DEQ to prepare a plan that addresses site-specific, environmental concerns in a timely fashion. During several meetings between representatives of DEQ and BASF, we agreed to disagree on selected site interpretation issues, but we agreed to continue moving forward and not dwell on the past. BASF believes that these agreements either are being ignored or were overlooked. The June 4th letter is a significant step backwards.

The DEQ should be reminded that BASF undertook several interim measures to mitigate potential impact to the Detroit River. We discussed these efforts with DEQ staff on several occasions prior to undertaking the efforts. Based on the content of the letter, we do not believe you have considered our accomplishments. They include:

- * Containing runoff within the concrete drainage ditches on site and transporting the liquids to an appropriate disposal facility.
- * Preparing a site modification plan to eliminate groundwater from entering the surface water ditches and the Detroit River (approved by DEQ on May 27, 1999).
- * Planting over 4,000 poplar trees to reduce the groundwater volumes, hydrostatic head, flow velocity, and potential discharge to the Detroit River.

Looking briefly at the historical accomplishments for a moment, the DEQ should realize that the actions BASF undertook pursuant to the existing Consent Decree to mitigate environmental impact during the mid-1980s are still effective and relevant to a remedial solution for the site today. These actions include:

- * Construction and maintenance of two engineered clay caps on the site. These caps reduce the amount of infiltration and the volume of groundwater that may vent to the Detroit River.
- * Management and maintenance of a vegetative cover across the entire site. The vegetative cover also reduces the amount of infiltration and promotes evapotranspiration of infiltrating precipitation.

These efforts are beneficial to environmental protection and are bonafide elements of the remedial action.

After BASF's notification to the DEQ on September 16, 1998, the DEQ requested a work plan to conduct site assessment tasks and to develop a remedial action plan for the property. During a meeting on March 8, 1999, BASF briefed the DEQ on the proposed content and schedule prior to preparing the work plan. The DEQ acknowledged receipt and acceptance of the content and schedule in a letter to BASF dated March 23, 1999. On April 20, as scheduled, BASF provided the DEQ with a plan to collect information on the site conditions to design an effective remedial action. Based on the technical merits alone, BASF is prepared to incorporate several suggestions raised in your review letter of June 4, 1999; however, overall, BASF finds the letter to be counter productive and contrary to accepted remedial practices.

RESPONSES TO SPECIFIC CONCERNS

The following sections contain comments, observations, responses, and/or questions. They are arranged in the same order as they appear in the June 4, 1999, letter to BASF.

The DEQ contends the work plan lacks necessary and required information to approve or deny approval of the work plan, yet fails to identify the missing information specifically. BASF needs to know what information is required. According to section 20114(8), DEQ must identify the information that purportedly is lacking.

Contrary to your representation, the January 14, 1999, correspondence does not reference paragraph (g). In fact, BASF has pursued response activities diligently. As discussed above, BASF has accomplished or is undertaking various interim response activities. Additionally, BASF prepared and presented a plan to investigate the site in order to acquire information and data necessary to design and implement a remedial action plan.

The conditions at the site are no different now than in 1994 when BASF requested the DEQ to identify the wells that required continued sampling, as specified in the Consent Decree. In fact, concentrations of several chemicals were lower during the March 3 sampling than they have been recently.

1) NEED FOR IMMEDIATE INTERIM RESPONSE ACTIVITIES

The letter states that DDT was detected on the property. This is not an accurate statement. The DEQ's laboratory qualified the reported presence of DDT in a single water sample by stating "possible interference may have affected the accuracy of the laboratory result." The split sample analyzed by Shrader Laboratory did not contain DDT.

Moreover, PCBs were detected in only one well. This occurrence will be addressed in the remedial action.

The DEQ requests that interim response actions be undertaken this summer and construction be completed by the end of the year. The DEQ goes on to suggest a method to contain chemicals on the site. BASF is not prepared to fund a very expensive system without appropriate design

documents. Pump-and-treat technologies have been less than stellar in their performance and results within similar soils, and physical containment systems are useless without an effective method for removing the trapped groundwater. The technologies suggested to prevent potential migration of groundwater to the river go beyond interim measures. Without accurate measurements of the groundwater gradients, flow directions, volumes, and chemistry, no one can design and operate a remedial system efficiently. Historically, lack of design data has resulted in remedial failures.

The DEQ states they desire to avoid unnecessary delays. BASF suggests the best way to avoid delays is to approve the plan that was submitted on April 20th or "...provide a complete and specific statement of the conditions or requirements necessary to obtain approval." BASF and DEQ expended significant efforts to reach agreement on the intent and outcome of the work plans. There is no significant disagreement in the scope of work proposed in the work plan.

The DEQ proposes that a physical barrier would effectively contain chemicals on site; however, existing data are insufficient to recommend the optimum location and design of such a barrier. A later section of the letter describes the DEQ's concerns with the mis-characterization of groundwater as "bank storage" from river flushing. BASF believes it is essential to define the distribution of chemicals in groundwater prior to building any type of physical containment system.

2) COMMENTS ON THE PROPOSED INVESTIGATION

The DEQ states that the proposed work will not define the full horizontal and vertical extent of contamination. In order to respond to the remaining comments clearly and completely, BASF numbered the bulleted items in this section one through eleven.

1. The chemicals DEQ lists for analyses are consistent with those listed in the BASF work plan. The only difference is DEQ's request for the ten Michigan metals and BASF's original proposal to analyze only for the four metals found at the site previously. We see no reason to analyze for chemicals not found previously. Please note that DEQ and BASF will split samples from the Riverview property again on June 17, 1999. If chemicals are detected in these samples that were not detected previously, they can be considered for inclusion in the analytical program.
2. The DEQ states that new wells need to be placed in upgradient areas of the property. The work plan proposes two wells on upgradient areas near West Jefferson Avenue and a well nest between the cap and the leased property. BASF discussed the placement of upgradient wells with the project manager several months ago. In addition, under the terms of the 1984 Consent Decree, BASF was required to place a well in an upgradient position, and thus made several unsuccessful attempts to install a well that produced adequate volumes of water. Eventually EPA, DNR, and BASF made a field decision to abandon the upgradient well. BASF has proposed these upgradient wells knowing there is a good chance they will not find adequate water. BASF believes an adequate number of upgradient wells are presented in the plan. Wells were concentrated along the Detroit River side of the property to characterize potential impacts in that area.

Thank you for offering the assistance of Mr. Hoin, but BASF has a competent professional staff and consulting geologists available.

3. The DEQ states that according to records on file, the ten wells (not eight) drilled to bedrock were not abandoned properly. BASF requests the DEQ to provide copies of those records. Additionally, the DEQ contends that these holes could provide a pathway for chemicals to migrate into the bedrock aquifer. BASF scheduled a meeting for June 15th with Mr. Al Howard to discuss the need to protect this aquifer. As DEQ staff is well aware, the water in the bedrock aquifer is brine and contains hydrogen sulfide, crude oil, and high concentrations of dissolved solids. Regardless of its quality, the brines have a higher specific gravity than the surface waters and will resist mixing. The clay layer separating the bedrock from the fill is fairly plastic and will flow to close a hole when disturbed. Since these holes were not cased, several collapsed during drilling thus blocking vertical migration. This is not a credible concern.
4. The DEQ raises a concern with water characterization near the Detroit River. BASF believes this is a key point warranting further investigation and consideration. Based on our understanding of the hydrological conditions such as periodic flooding and flushing, we suspect there is a chemical gradient in the groundwater from higher concentrations on the landward side to lower concentrations on the River side. BASF proposes to evaluate and measure this chemical gradient by judiciously placing monitoring wells perpendicular to the groundwater flow direction. At this time, we believe two rows of three wells will provide ample data to make a decision. Target analytes will be consistent with the rest of the site investigation.

The DEQ states that additional wells will be necessary along the River and upgradient, but this comment is not qualified as to how many are necessary or where they should be. Please clarify the basis for the comment.

5. The DEQ recommends continuous measurements of groundwater elevations for comparison with surface water elevations. BASF is agreeable to this request. We propose gathering data from at least four locations: a stilling well in the Detroit River and a line of three wells extending from the River to the cap (the same wells described in point 4 above). BASF will collect data for three months.
6. The DEQ requests samples of soils from this landfilled site. The DEQ states that its files do not indicate any characterization of soils, but that a previous study noted contamination at the 20-foot depth in clay. These are inconsistent; please clarify the contradictory statements.

BASF is not considering any analyses for chemicals in soil, either at the surface or below surface. BASF knows the site contains chemicals in the wastes buried on site. The questions to be addressed are which chemicals may be leaving the site and through what reasonable exposure pathways. Surface soils, if collected, would show the composition of the clay

imported to cover the wastes.

7. The DEQ recommends sampling soils at the location of the distressed vegetative cover near MW-E and MW-D. BASF believes groundwater and not soil is the medium of interest here. The vegetative cover is damaged due to a high water table in this area. On March 2 and 3 the DEQ sampled water from these wells. The water level in the wells was nearly identical to the ground surface. As stated above, groundwater is the issue, not soils. Thus, BASF is not proposing to collect soil samples for chemical analyses. BASF will characterize groundwater quality, as discussed at bullet 4 above, to design an appropriate remedial system.

BASF is not proposing an investigation to characterize the substance(s) found in MW-F and MW-M. Rather, BASF is proposing a plan to assess the product's extent and its removal.

8. BASF instructed its consultant, URSGWC, to prepare a plan to sample the former cell parts used as rip-rap. The only chemical of concern that may be associated with these vessels is mercury. At this time, BASF envisions a sampling program that assesses different parts of seven vessels. BASF will work with Mr. Hoin after DEQ approves the work plan.
9. BASF attached two maps of the property (Attachments 1 and 2) prepared during construction of the marine terminal in the late 1970s. BASF believes all the subsurface structures were removed during consolidation of the wastes under the caps and during construction of the caps. If during performance of the work, BASF discovers any subsurface structures that can provide pathways for chemical migration, they will be assessed and closed during the remedial action.
10. The DEQ states that mixing zones typically are not applied to sites venting groundwater containing bioaccumulative chemicals. The DEQ also states that there are exceptions. DEQ Operational Memorandum # 17 (dated September 8, 1998) presents the methods for applying for a mixing zone determination when bioaccumulative chemicals are present. BASF will review these methods BASF requests the DEQ to provide a list of the atypical sites with bioaccumulative chemicals that received mixing zone determination.
11. BASF has no reason to believe the portion of the property leased to the City of Riverview poses a concern for potential environmental impact. This belief is based on the work performed previously. Records from borings drilled in this area do not describe "chemical wastes", "chemical odor", or "oily matter" as described in borings drilled in areas that are now under the caps.

BASF will petition the city to allow placement of one or two monitoring wells to assess groundwater conditions beneath this area. As stated earlier, BASF does not plan to collect samples of soil for chemical analyses.

3) ISSUES RELATING TO A FINAL RAP

The first two bullets in this section refer to the ability of applicable technologies to achieve relevant cleanup levels -- by utilizing a mixing zone determination or by some other means. The

text of the work plan uses several "if ... then" statements, and is intended to provide directions on how to answer questions – not what the answers should be. Until usable data are collected and applied in the remedial design, BASF believes further discussion on an appropriate remedial action is premature.

The DEQ states, "There are a number of other necessary elements, both technical and administrative, that are necessary for lawful closure ... but we [the DEQ] will identify those elements in later correspondence." BASF is confused by the DEQ's reluctance to identify these necessary elements at this time.

As a final note, BASF will not undertake a unilateral investigation of sediments in the Trenton Channel. BASF discussed this issue with DEQ previously on several occasions.

SCHEDULE

BASF is not willing or prepared to initiate, build, and fund an "interim" response action without adequate design considerations. Although the DEQ understandably wants to move quickly, BASF does not wish to proceed at risk. BASF is willing to accelerate the schedule provided it does not compromise technical quality, adequate scientific peer review, or substantially increase the cost of the project. In passing, the only delay to the schedule so far is due solely to DEQ's extended review time and unnecessary change in course.

If the DEQ approves the work plan in a timely fashion, BASF can begin the field investigation by the end of June, complete the remedial investigation report/action plan by the Fall of 1999, and begin construction (if needed) shortly afterwards. This schedule is consistent with that discussed on March 8th in DEQ's offices. The DEQ's proposal to have construction completed by the end of the year is arbitrary and capricious since, currently, we have absolutely no idea what will be constructed.

CLOSING

We are becoming concerned that the technical aspects surrounding this property are getting too far ahead of the legal aspects. We discussed this issue with the DEQ representatives, but as yet, we have not been contacted by the Attorney General's Office. Currently, we believe our efforts are not too far out of line from the terms of the 1984 Consent Decree.

We still need to know what EPA's involvement will be at this property. The EPA was a signatory to the Consent Decree, and we noted that DEQ copied EPA representatives on the June 4th letter. We also need to know if the EPA is agreeable to BASF's work plan to assess site conditions and design a remedy. We also wish to be assured that other Federal agencies, such as the Corps of Engineers and the Coast Guard, will be agreeable to BASF's work in the flood plain and along the shore of the Detroit River.

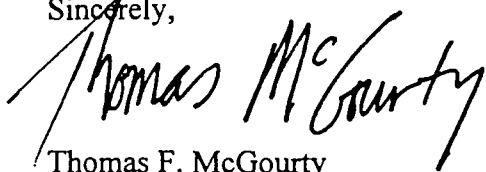
As we stated at the outset, BASF is committed to evaluating its property in Riverview and to do what is appropriate to protect human health and the environment. Please remember, BASF personnel brought this site to the DEQ's attention when we discovered the distressed portion of the vegetative cover. We are committed to fixing what is broken, but we only want to fix it once,

and we do not want to start over. BASF believes a great deal of data and remedial action already has occurred. It is not necessary to approach this situation from ground zero.

BASF presented a work plan to the DEQ for review and approval. The comments received, for the most part, do not address concerns with the scope of work but ask us to start over while DEQ defers a commitment to a later and unspecified time. Again, BASF offers to incorporate the DEQ's technically sound ideas into the work plan as identified in this letter. BASF requests your approval of the work plan or a complete and specific statement of the conditions necessary to obtain approval.

You may call me at (734) 324-6209, or Mr. Jack Lanigan at (734) 324-6219, to discuss these issues further.

Sincerely,



Thomas F. McGourty
Manager, Ecology Services Department

Attachments, Two Riverview Site Drawings

cc: Beth Vens, DEQ - Livonia
Mike Ribordy, EPA - Region V
Mary Fulgham, EPA - Regional Counsel

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